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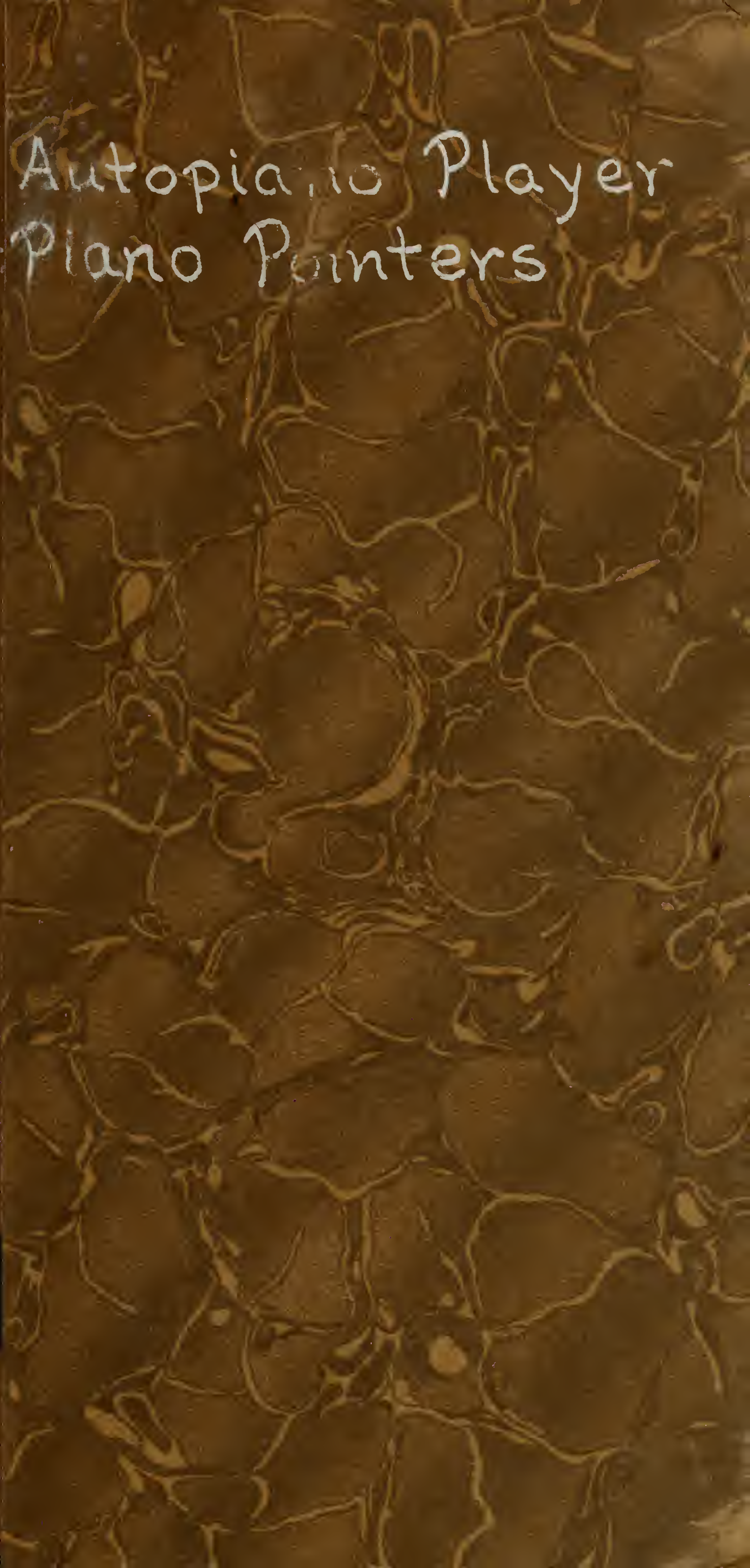

Autopiano Player
Piano Pointers

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PLAYER
PIANO
POINTERS

DE LUXE ACTION

THE AUTOPIANO COMPANY

NEW YORK, N. Y.

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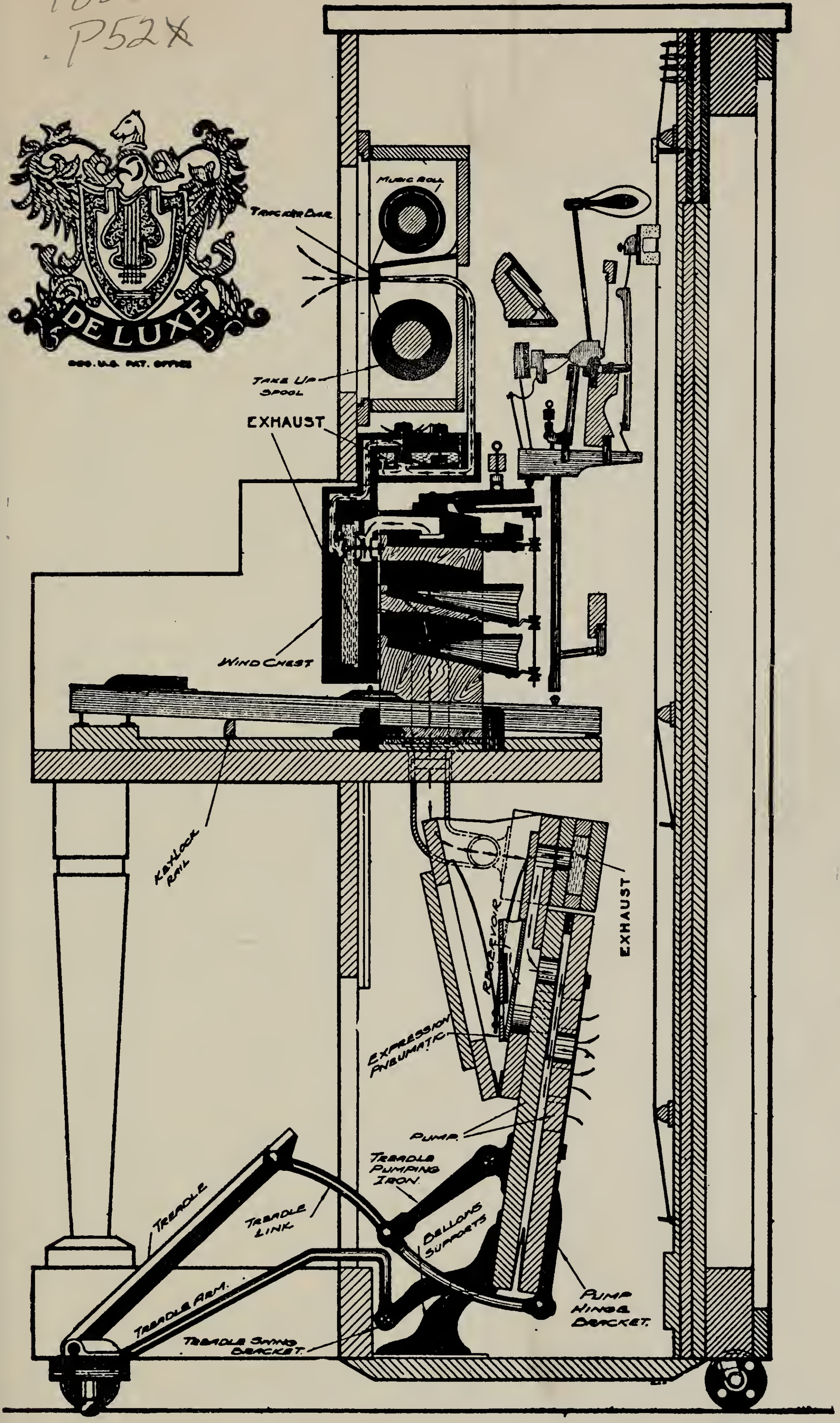
DE LUXE
REG. U.S. PAT. OFFICE



Cat 1

FOREWORD

THE constant demand for information regarding the care and adjustment of Player Pianos which we are daily receiving from all sections of the Globe has prompted us to write as concisely as possible a book containing all the information possible on the care and adjustment of a Player Piano.

Many books and pamphlets have been published by different men interested in the upbuilding of the Player Piano, but none of them that we know of have given the tuners and repairers the *Know-How Information* they have long craved for. How to get at the component parts of the Player, and to make the slight adjustments that are necessary from the constant use of the instrument.

There are close on to 1,000,000 Player Pianos throughout the country, and these instruments should be cleaned out and the

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bearings oiled at least once a year. *This refers to every Player Piano that is made.*

So, in publishing this book, we are trying to educate the Sellers of Player Pianos, the Tuners and Repairers, as well as the Owners, and to give the music industry a service greater than ever before. Service is the *watchword* of the DeLuxe Actions, and we are aiming to give you *service.*

The educational work relating to the Player Piano is of the greatest importance and should be treated in the broadest and most comprehensive manner possible by every manufacturer.

When a man buys an automobile or an expensive watch, he has it thoroughly gone over each year and willingly pays the charge for such work. Is it not reasonable to assume then that the owners of Player Pianos would willingly do the same if it were properly explained to them and they could realize what a benefit it would be to their Player Piano?

To the Repair Man and Tuner

THE Auto DeLuxe Actions are to be found in practically every city and township throughout the United States and Europe, and are conceded to be as near FOOL PROOF as human being can make them.

But, if the action is to work properly, it must be oiled and kept cleaned and regulated to obtain the best results. There never was a time and there never will be, when it will NOT be necessary and wise to occasionally oil a bearing where two parts work together, so why not oil the bearing parts of a Player and make it work smoothly?

This can also be said about cleaning the dirt out of the channels. It is so simple to do these things in a DeLuxe Action that we have tried to give you the instructions in as simple a manner and in the plainest words possible, so that you will understand the way to do it. DON'T PULL A PLAYER ALL APART before trying the instrument out thoroughly. The following chapters treat of each section of the Player, and if the instructions contained in these chapters are followed, you can help yourself at all times and find how simple and easy it is to make the proper adjustment.

When the best materials are used, Player Pianos that are properly built will last for years. DELUXE ACTIONS have always been distinguished for the excellent materials used to build them. Cheap Players made of poor materials and poor workmanship cannot last. The service we offer the Tuners is for the upbuilding of the Player Piano and we are ever ready to help you.

How to Oil the Player Action Parts

WHEREVER you find two metal parts working together, it is necessary to drop a little oil on the bearings occasionally to avoid wear and squeaks.

NEVER put oil on a CLOTH BUSHING, but instead, use a little vaseline.

The main points to oil are the bearings in the gear or transmission frame, where the upper music spool shaft turns. On the lower shaft that is bushed, use vaseline. Use a little vaseline on the sprocket chains and idler wheels, also the motor crank shaft, the felt on brake button on take-up spool, the cam for tracking mechanism on upper music spool shaft, and all other bushed bearings. Oil the two shafts of take-up spool where they bear on the spool frame; also the left-hand spring socket for music roll.

In the lower action, use a little oil on all the metal bearing parts of the treadles. On the bearings of the piano pedals, and also where the springs slide, a little powdered graphite will help.

On the spiral springs for governor and bellows, use a little vaseline. A drop of oil on the V shape springs in the reservoirs at the riveted joint will prolong the life of the spring. Wherever there is a tracing wire working through a bushing, put on a little vaseline. On the springs of sliding valves in the Gate Box, Tempo Modulator, and Tempo, Rewind and knife valve in governor bellows, use dry graphite under the spring.

How to Clean the Dirt out of the Channels and Tubes

THE quickest and easiest way to clean out the tubes and channels is to take the top player action out of the piano, set it on a bench or table, take off the L shape (or front) groove boards, also the tube or channel board, which leads to the tracker board, and with the aid of a small rubber tube placed over each hole in the tracker, blow through tube and you will remove all the dirt. Then place the end of tube over each channel in primary action and blow, blowing from the front of action. This will clean out your action.

Place the channel tube board and groove boards in position and tighten up screws, but don't over-turn them; place action in place and tighten. A suction pump can be used to clean out the instrument, but blowing the dirt out is more effective. A Tuner's force or blow pump can be used instead of the rubber tube, if you so desire.

How to Detect a Leak in a Player Action

IF you find when playing the instrument that the treadles have no resistance and instrument does not respond to the pumping, it is very evident that there is a leak somewhere.

To find this leak place a roll of music in the spool box, hitch it to the take-up spool and turn it until the holes in the paper appear, but do not uncover any of the holes in the tracker bar. Throw the re-roll lever over to the left, hold the music spool tight with the left hand and begin pumping. If, after three or four full strokes of the treadles they show no resistance, it is very evident that the bottom action leaks. But, if after three or four strokes of the treadles, you find the treadles grow hard to pump, you are pretty certain the leak is in the top action.

Should you find after making the test that the bottom action leaks, take off the tube that connects the motor and plug it up, then throw the reroll lever to the left. Get a small tube, place one end in the ear, holding the other end in the hand, and while working the treadle with the other hand, draw the tube end along all the joints of the wind chest and where the bellows are screwed together, and see if you can detect a leak.

It might be a better plan first to go over the bottom action and tighten up all the screws wherever there is a joint, also tighten up the screws on the inside of the reservoir. To get at these screws, you must take off the wooden cap on the front side of reservoir. Having tightened up all the screws, then take your rubber tube, and see if you can find a leak. If you find an escapement of air in any joint, then a new piece of packing should replace the old piece. If from severe dampness or heat, a board should crack, the same can be filled up with shellac and a thin piece of rubber cloth pasted over it, stopping the leak. Examine the corners of the different bellows to see if they are worn through and allowing air to escape. If the bushing in any of the valve boxes where the wire of valve works through should become worn or packed, take a sharp pointed awl and pick the cloth up a little. softening the same, and then fill it up with vaseline. If you find the corner of the center fold of any bellows cracking, take a thin piece of leather about twice as wide as the worn part and three times as long on each end, run a little glue all around the surface edge of the leather about ¼ of an inch, then spread the leather all over the bellows cloth that is worn, using great care that none of the glue touches the worn parts. See that all the joints are tight before replacing.

Piano Actions

General Information Relating to Piano Actions

IT happens in most cases that the various troubles in Player Pianos are not laid at the door of the piano actions where the trouble belongs and the piano action should always be examined first if the player does not work.

All piano actions are not constructed exactly alike and they are all materially affected by extreme dampness or dry weather. The atmospheric conditions causing changes in adjustment, therefore, causing faulty repetition in piano action.

If the repetition is slow and sluggish, the best way to test piano action is to press the hammer rail forward until hammers touch strings, then release quickly. If the hammers are slow in returning, then the trouble is in piano action.

The following instructions have proven successful many times.

First see that the jacks are the correct length; these are regulated by capstan screws in back of piano keys. If not, screw up on screw until jack just rests up under butt. To test, if jack is under butt freely, press down on piano key quickly (in front) and release very slowly to see if jack slips freely under butt. If not, turn down on capstan screw until it does. If the piano hammer blocks the string, turn the regulating screw in piano action up or down as the case requires, before regulating the travel of the strikers (or flexible fingers), see cut page 12. To determine if blow of piano hammer is right, push piano key down very slowly. The hammer should travel to within ⅛ inch of the string. If it does not, regulate as mentioned above.

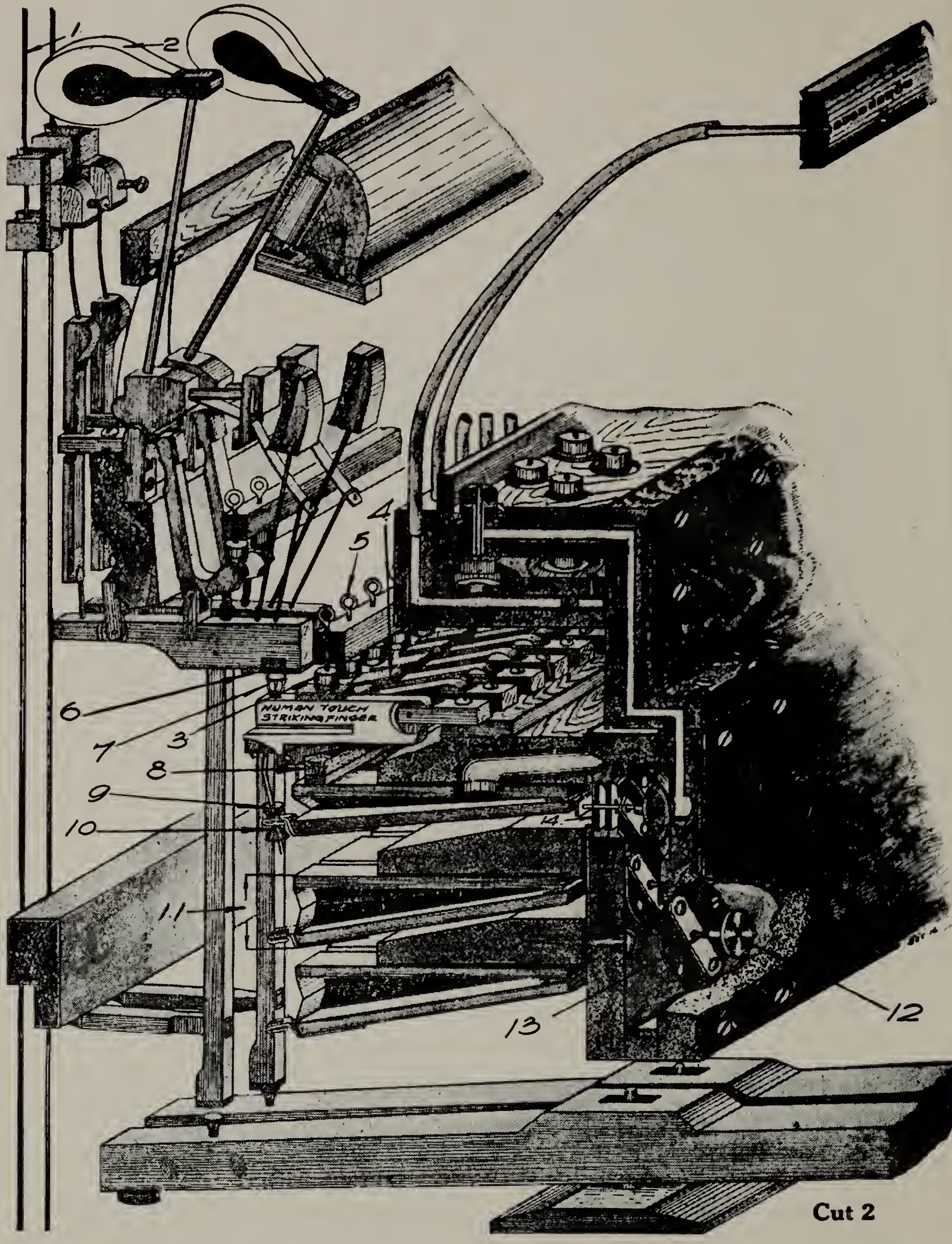
Second, examine dampers, butts, jacks, stickers, links and all bushed points. If they have become swollen in damp weather, causing these parts to stick, apply benzine with a thin piece of wood, working these parts freely. This will clean the pins and shrink the bushings, causing parts to work freely again.

If damper rod squeaks, remove player action, also piano action. Then you will find three or four little bushed hinges that hold the damper rod in place. Put a drop of oil on each of the bushed hinges so that the rod will move freely.

How to Regulate Player Actions and Valves

IN case you find a leak in the top action, before taking the action out, tighten up all the screws in the pouch board and the L shape groove boards and then try the instrument, because in most cases, it will only need tightening up.

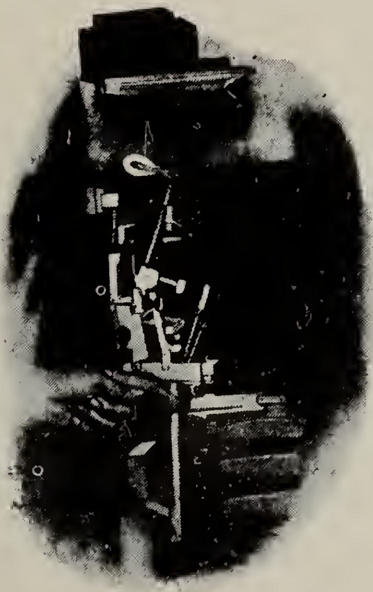
If you still find a leak, then take the action out and set it on a table or bench. Take off the L shape boards and the main pouch board, and then you will have a full view of the primary and secondary valves. Try each secondary valve gently to see if it has the right travel (or throw) also whether the valve bushings have become swollen and stiffened the valve, or to see if the valve is slipping on its stem. The travel of the valve is 1-16-inch; if travel is too small, push the valve back against its back seat and turn stem to the right until desired travel is reached. If too much travel, push valve back against the back seat and turn stem to left, using care, however, not to push the stem through the valve punchings. In our former type of valves with double screw stems, to find if valve has proper regulation, hold a small straight edge across valve chest. The black felt punching, on wooden button, should go just beyond the straight edge, when valve is pulled toward you, or in other words, the wooden button which is screwed to the valve stem should come just even with straight edge. If they do not, hold the valve stem with a pair of pliers



Cut 2

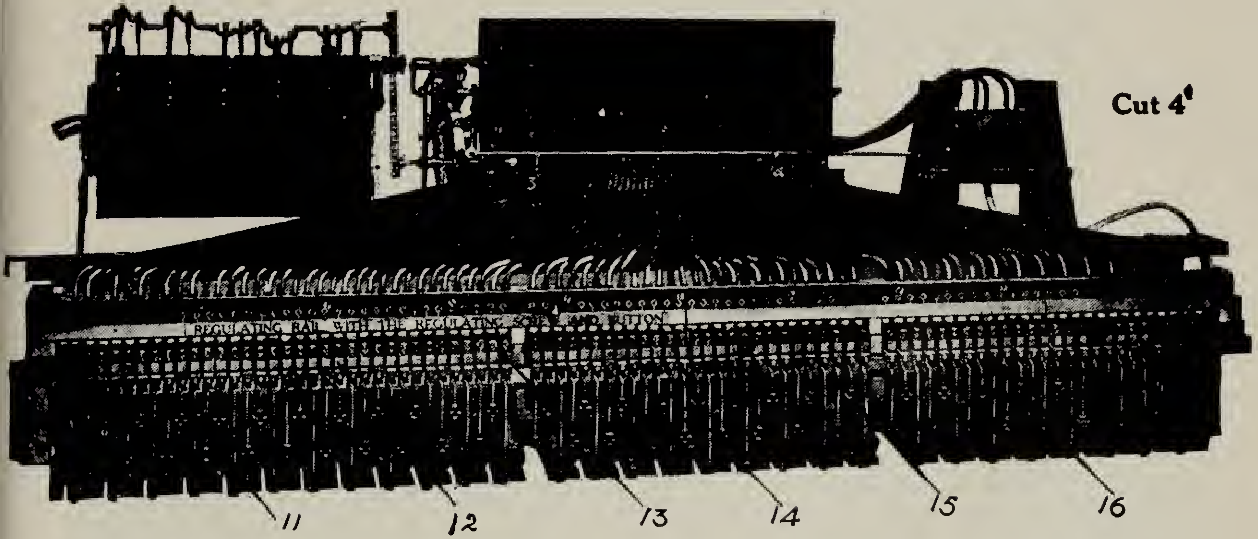
and draw the front valve up against the cup and turn wooden button up or down as the case may require.

To see if the secondary valves rest tight against the metal cup, pull valve out gently against the cup. If same only rests on one side of the cup, use a pointed instrument such as a needle or a hatpin, and while holding valve stem, ease front part of valve until all sides of same rest on metal cap. The new design valve buttons should be regulated about a full 1-16 inch higher than level of valve chest. (Raising straight edge with cardboard.) Tighten all screws on inside of chest which holds pneumatic shelves. These are the large round head screws and there are three rows of them.



Cut 3

Having regulated your secondary valves, take off the music spool box and primary valve boards. They are held in place by a few screws. When music spool box is free, take out the screws that hold the lead tube channel board (two rows of screws) then take out the screws at ends of primary action and it can be lifted off the body of the action. While the spool box is off the primary action, take a rubber tube, put one end over each hole in the tracker and blow through tube and clean all dust out of the tubing. Also use same tube and clean out any dust that may be in the channels of primary action leading to the pouches. Blow from front of action, as the dust will be found back of the patented sieves. After cleaning primary boards with tube, turn same on back and gently rap it on bench to make sure that all the dirt is removed. It would also be wise to blow out each vent, although with the sieves in the action, the vent seldom, if ever, gets clogged up. Unscrew the primary chest and look over pouches; if the leather seems stiff, rub each pouch gently with the finger and soften the leather, but be careful not to cut the pouch leather with the finger nail. Examine each primary valve to see if there is enough throw to the valve; it should have at least 1-32nd inch. If the punchings in the valves have become swollen, take a little light hammer and tap the under valve gently, which will have a tendency to pack the leather again and give you the right throw. It would be well as this time to examine the top button of valves to see that there is no dirt under the valve and also clean out any dirt that may have gathered in the little grooves around the top button. Now screw the primary action together. Before placing the main body of action into the piano, examine the leather nuts on pneumatic wires, and see if they have too much play. These buttons should fit snugly on the hinge extension. Be careful not to make them too tight or the pneumatic wire will bind. Take the secondary pouch board, lay it on the bench and examine each pouch. If the leather seems a little stiff, rub gently with the finger until the pouch touches the bottom of pouch hole, but be careful not to cut the pouch leather with the finger nail. Screw the pouch board on to body of action, being careful not to turn the screws too tight and over-turn them. Set the action in the piano and screw into position; examine the FLEXIBLE STRIKERS to see that they are regulated properly.



Cut 4

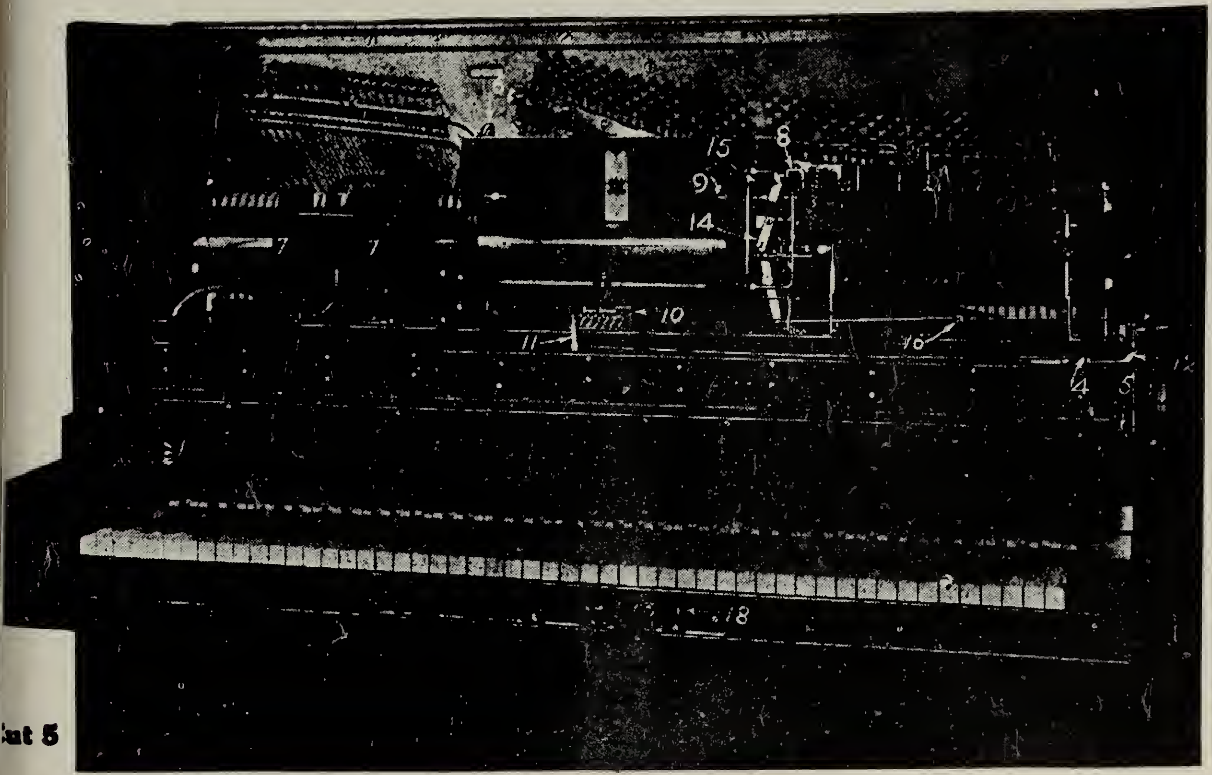
To regulate the Flexible Strikers, which lift the whippens, take off the regulating or stop rail and the strikers and capstan screws will be exposed to view. The capstan screws should rest snugly against the under side of the whippen. If they do not touch the whippen, turn the capstan screws up using a pointed tool to turn them. But, do not turn them too high so as to raise the back check of the piano action. If the key bottom of the piano settles and capstan screws cannot be raised, slip a piece of cardboard under each end of the action rest blocks, and thereby, raise your player action which will give you a chance to turn the capstan screws down, and give them a better hold. Put back the regulating rail; this regulating rail is used as a stop or check on the pneumatic so that when same closes, the hammer will not block the string. To regulate each striker, use a tool with a hook on end, and by inserting it in between strikers, same can be pulled up against regulating rail. If the blow is not about ½-inch to ⅝-inch, turn regulating screw until desired blow is obtained. The stroke is about the same as the stroke of the piano action. Should the pneumatic seem to check while doing this, take a small rubber tube and blow in channel of pouch board which will force the secondary valve to seat, and keep it from blocking pneumatic when regulating striker.

Having regulated your action to this point, take your primary action, spool box and channel tube board and screw them together, set them in place in piano and screw to the main body of player action. Be sure, however, that the block on each end between primary and secondary actions are tightly screwed so as there can be no leak. Now put on the L shape groove boards, but before doing so, tighten up the screws that hold these two boards together. Connect up your motor and wind trunk tubes and all other connections. Then the instrument should be ready for playing.

How to Take Out the Top Action

TO take out the Top Action, first remove the top frame (Front panel) of piano, then take off the music shelf and fallboard. Remove the four large screws at left hand side of action, marked No. 1 in drawing. Then, take out the screw No. 5 at right end, take out the screw in brace No. 6 that is screwed to piano plate. Take off rubber tube No. 2 that connects to motor, disconnect the leather buttons that hold Reroll wire connection No. 3 and the Tempo Indicator wire No. 4. Also the rubber tube at left side that leads to Loud Pedal Bellows.

Having disconnected these parts, draw the action forward a little and lift it out of the piano. Be careful, however, in lifting the action out not to let it rest on the Pneumatics, as you are apt to break them. Never slide the action along the bench.

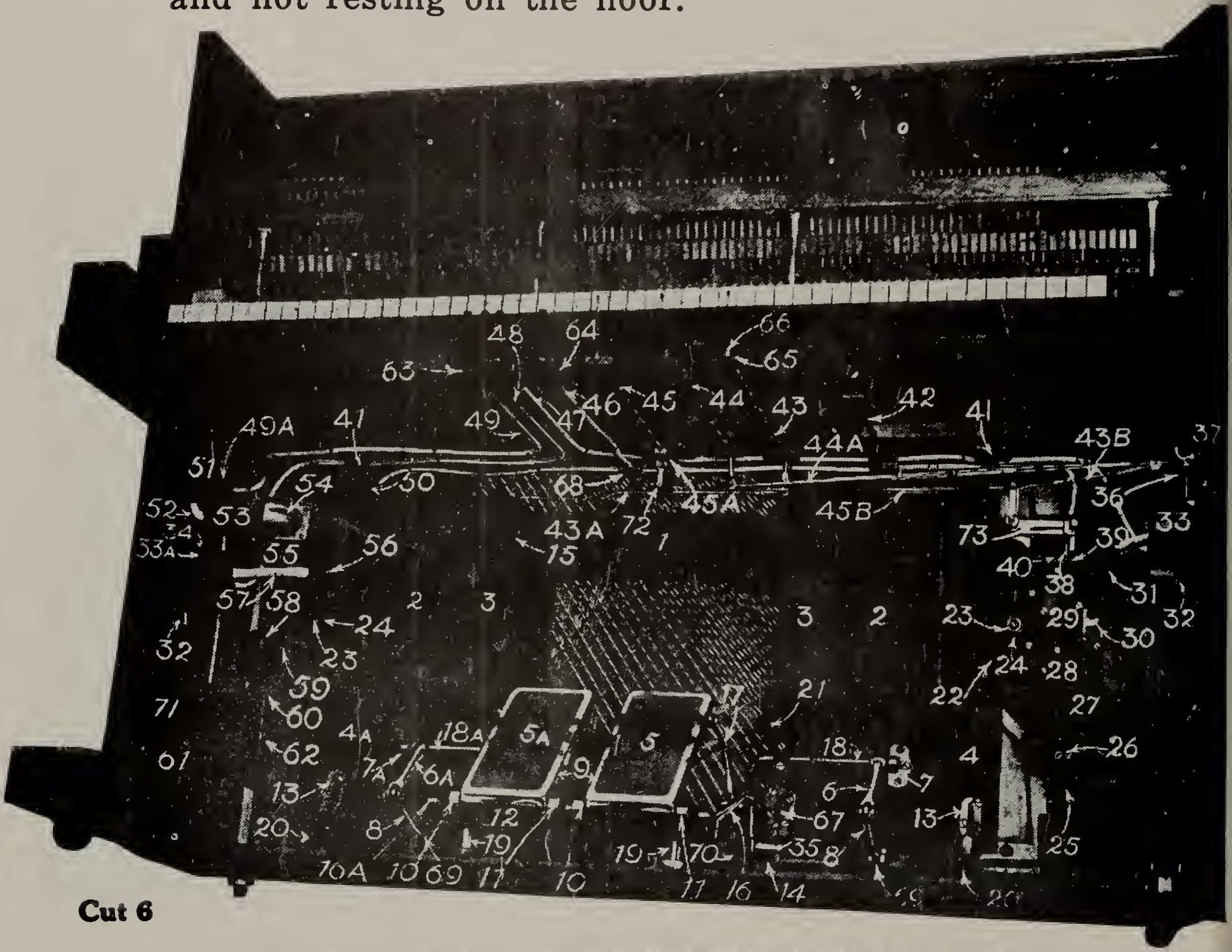


ut 5

How to Take Out Bottom Action

TO take out the Bellows or Bottom Action, first remove the large rubber tube No. 53 which leads to the wind chest. Then the two tubes that lead to the Soloist Pneumatics No. 33 and 33A. Now disconnect the tube No. 31 to Governor and Tube No. 59 to Loud Pedal Bellows. Then disconnect the wires that lead to the levers in Keybed No. 43, 44 and 45. You can now unscrew the nuts on the two metal supports No. 50, tilt the top of bellows forward and lift it out of case.

When taking the bottom action out, see that the treadles are in a closed position between the bellows and not resting on the floor.



Cut 6

Should a Note Speak When Tracker Bar is Covered

SHOULD a note speak when the music roll is in the spool box and the tracker bar is covered as soon as the treadles are operated, it may be caused by dirt being under the primary valve or some foreign matter on the secondary valve, which would prevent either of these valves closing, or a leak in the packing leather at joints where the L shape groove boards screw on to the primary or secondary valve chests.

To find this trouble, see which of the notes are speaking. Count from the bass end of piano action and get the number of the note. Then count the primary valves from the bass end until you reach the same number and examine the button to see if it is seating itself properly. Take a little fine wire with right angle bend and work it gently under the top primary valve button and see if there is any dirt under the valve. This generally removes the trouble, but you should also tighten up all the screws in the groove boards and pouch board. It would be well to examine the secondary valve to see that it is clean and seating properly.

Timing a Motor

TAKE the ordinary music roll, preferably one without too many heavy chords. (Starting on blank part of music roll.) Mark off the foot measurements as shown in cut on opposite page.

Time is 0 to 3½ feet, setting pointer of Indicator at 70 for ½ minute.

Time is 0 to 7 feet, setting pointer of Indicator at 70 for 1 minute.

Time is 0 to 10½ feet, setting pointer of Indicator at 70 for 1½ minutes.

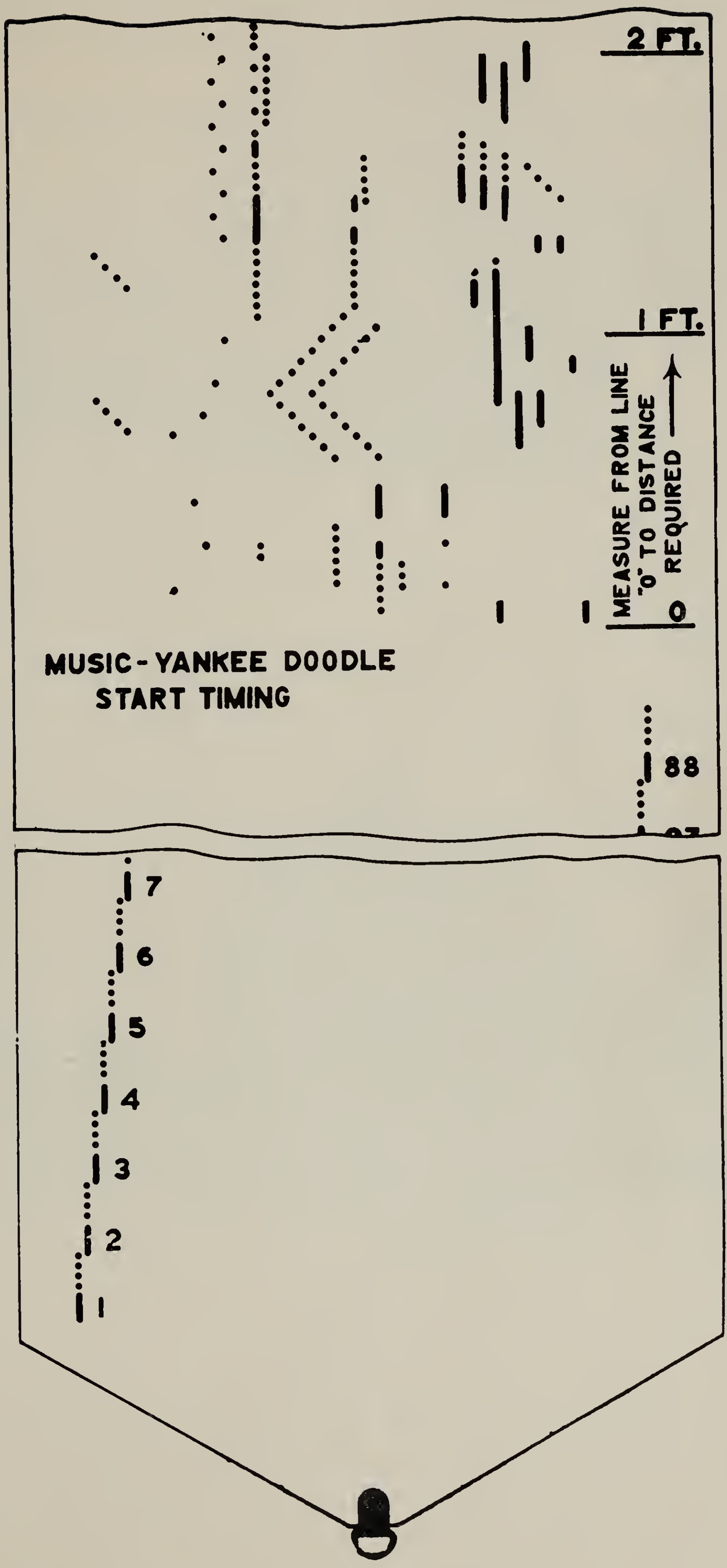
Time is 0 to 13 feet, setting pointer of Indicator at 130 for 1 minute.

Like testing with tempo at 30, you get 3 feet for 1 minute.

And testing with tempo at 50, you get 5 feet for 1 minute.

Then place music roll in position to play (with O starting point) directly over tracker bar. Hold music roll with one hand and pump up bellows; set the time on watch and start to play. If motor goes too fast or too slow, regulate as follows. See Motor Governor instructions, page 22.

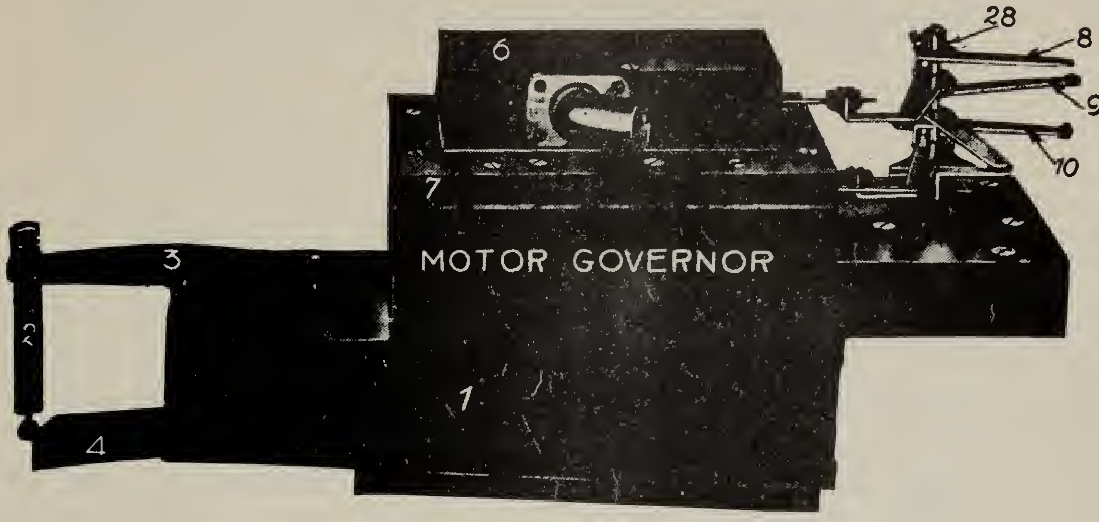
A good test roll should be in the possession of every Tuner. Our test roll and timer is arranged especially for timing motors and testing players. Price, seventy-five cents.


2 FT.
1 FT.
MEASURE FROM LINE "0" TO DISTANCE REQUIRED
MUSIC - YANKEE DOODLE
START TIMING

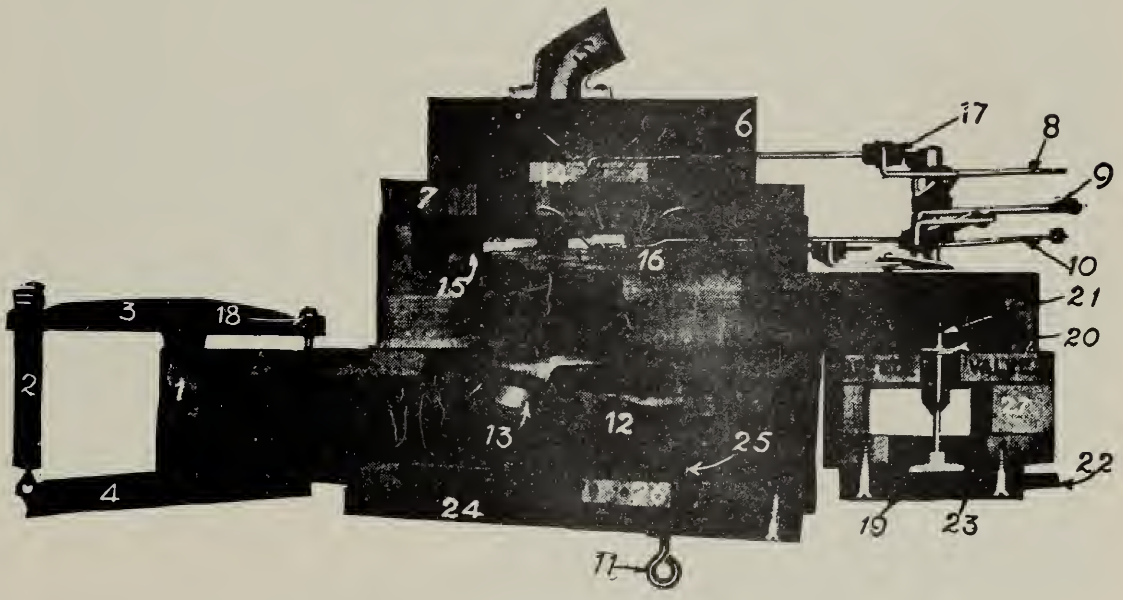
How to Regulate the Motor Governor

BEFORE starting to regulate the Tempo, see that the motor, the transmission, the brakes, and all parts are in place and properly adjusted.

Open tempo valve to 80 or 90, then remove the spring from the motor governor. Pedal normally and then turn the regulating screw of the motor governor to the right until knife valve No. 12 closes, then turn the screw the other way until the motor moves slowly. Now replace spring and start to pedal. If motor speeds up on hard pedaling, the spring is too strong—weaken the motor governor spring No. 2 slightly. If the motor slows down on hard pumping, the spring is too weak. Regulate the tension of the spring until the motor runs the same on hard and easy pumping. To regulate or change tension of spring No. 2, unhook it at the bottom and turn to the right to stiffen, or left to weaken. But for slight regulation, the turning in or out of screw No. 18 will do. Set tempo valve so the motor moves when the indicator is at 10. Set the indicator at 30, and if the music slows up, the slot in tempo valve is too small and should be filed out a little. Then test at 50, and if it runs slow there, file slot out until it runs at right speed. Try the valve at different speeds, as the case may require, and file out if running too slow; or paste a thin strip of leather in valve opening if running too fast.


28
8
6
9
10
7
MOTOR GOVERNOR
3
2
1
4

Cut 8


17
8
6
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15
16
10
21
3
18
20
2
1
13
12
25
22
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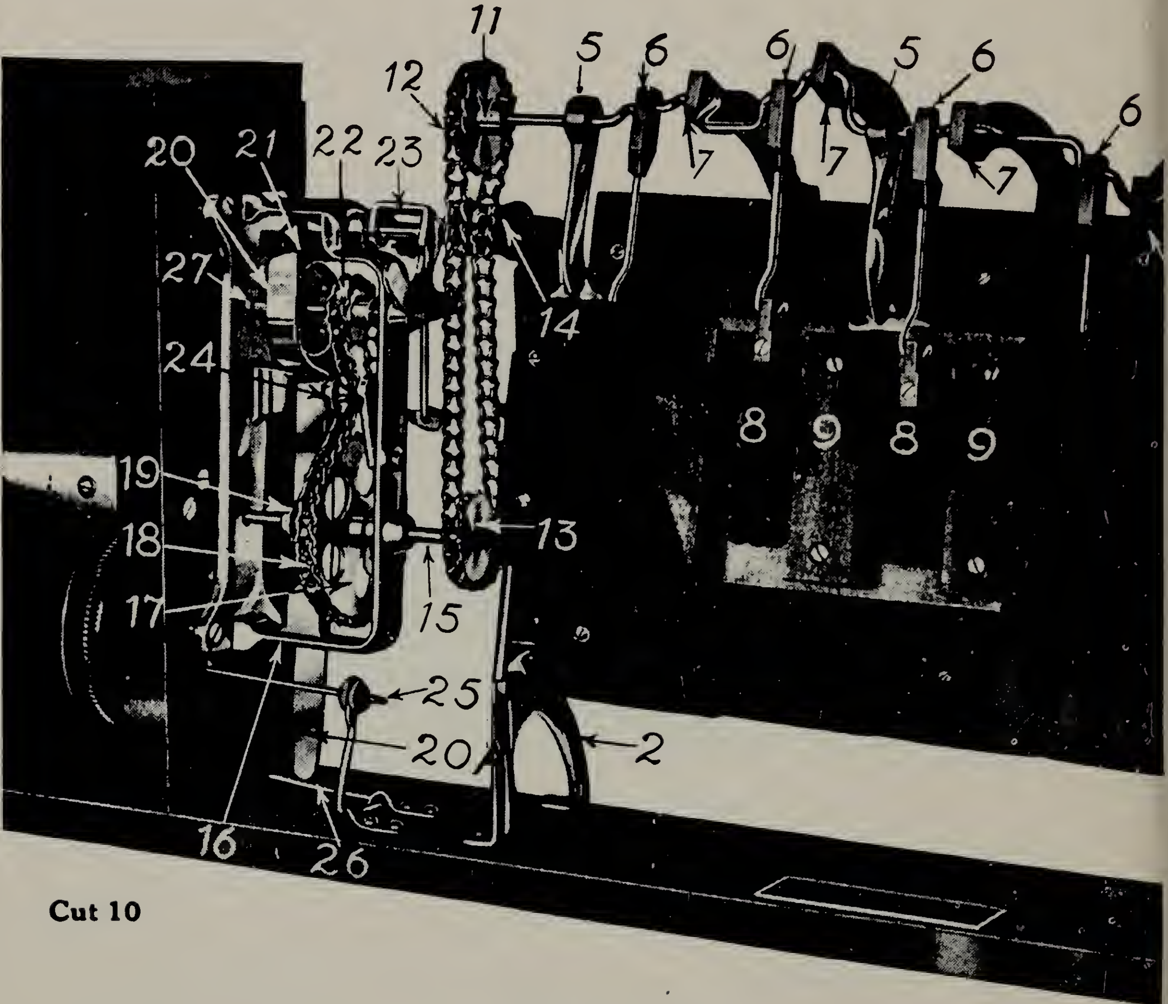
24
19
23
11

Cut 9

The Motor

THE valves of the motor have been correctly set at the factory and their adjustment should not be disturbed, unless some foreign matter has gotten between the valves and its seats, causing a leak.

Sometimes, a great deal of dust under the valve and the dampness affects them. When this occurs, it will be necessary to wipe off the valves and seats



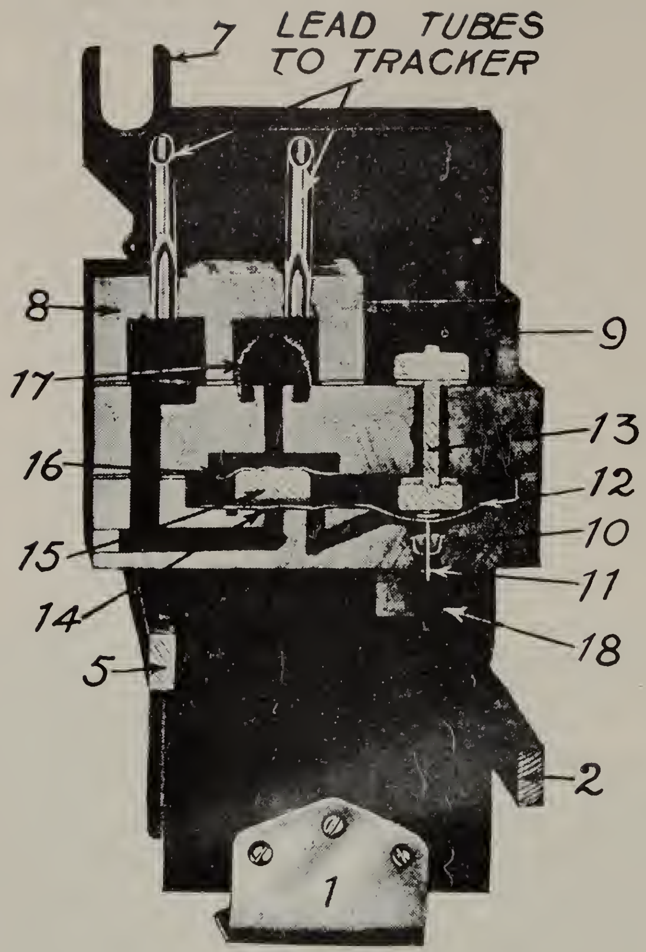
Cut 10

and sprinkle a little talcum powder on the valve seat.

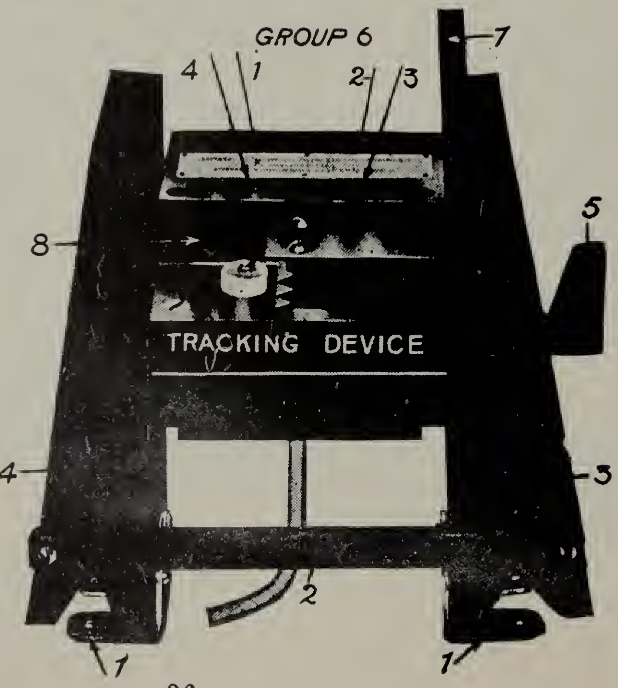
Second, see if all bearings are working freely on shaft and pneumatics do not bind. The valves or slide should never be oiled or greased in any way, but a little vaseline on the crank shaft at the bearings will help.

The motor should be tested with chain off, to see if it runs smoothly at 10. If a little slow in starting, see if tempo valve has been changed in governor. If so, regulate button so it will run on 10. If valve slides warp a little, they can be regulated easily. Take each valve off separately. Lay a fine .000 sandpaper on flat surface and place VALVE on top of paper and gradually work down the face to a true and smooth surface, and if face of MOTOR needs truing up, remove each slide, NUMBERING EACH ONE and its CORRESPONDING POSITION ON MOTOR. Wind a fine piece of sandpaper around a flat block, place same on face of the motor and rub lightly until the surface or face of motor is smooth and true.

Much care should be exercised in this work so as not to make the face of motor uneven. Use a little dry graphite on face and slides afterwards. You might use a little vaseline on motor shaft and arm in case a squeak may develop, by reason of the bushing cloth being glue soaked or rust from standing for some time.


7
LEAD TUBES
TO TRACKER
8
9
17
13
16
12
15
10
14
11
18
5
2
1

Cut 11


GROUP 6
4
1
2
3
7
5
8
TRACKING DEVICE
4
3
2
1
1

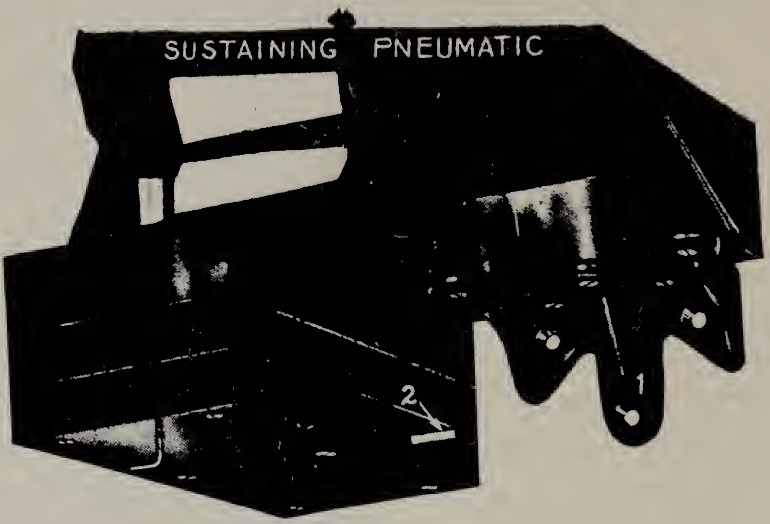
Cut 12

How to Clean and Regulate the Tracking Device

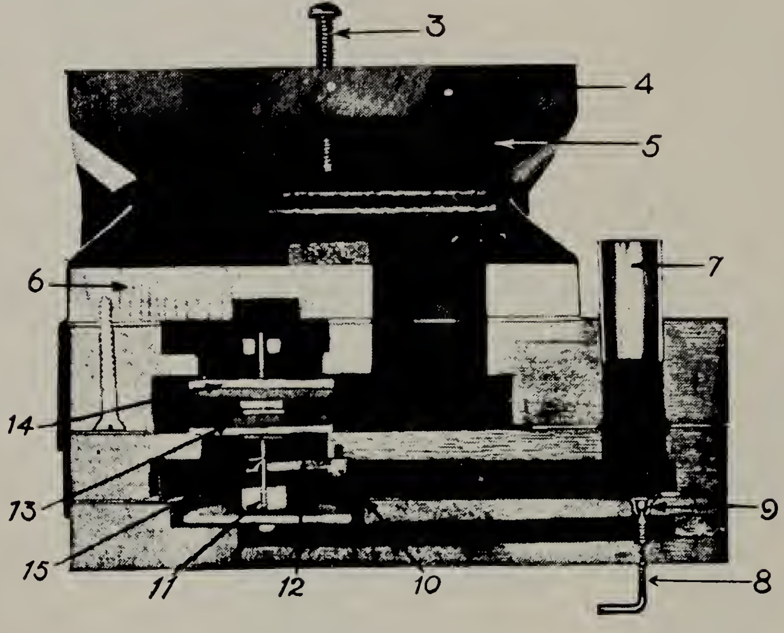
WHEN the channels of the Tracking Device are clogged up with lint and dust, it cannot be expected to work. To clean this dust out, remove the little cap (No. 8 in drawing) that is held in place by six screws, take a small brush and dust off the screens, No. 17. Then, take a small tube, place one end in the mouth and the other end over the holes in the tracker and blow hard. This will blow the dirt out of the tubes. (There are four tubes.) While the cap is off, look at the primary valves, No. 13, and see if they are working properly; the travel of the valve is a full thirty-second (1/32) of an inch.

The vents, No. 10, are automatically cleaned by our patented vent cleaner, No. 11. Replace the cap, No. 8, but be careful not to turn the screws up TOO HARD for fear you will over-turn them, but screw them down to avoid a leak. When you have done this, set the two bellows, No. 3 and No. 4, in an even position, then see if the cam on gear frame which operates the music spool shaft is bearing on the shaft with the center of the cam (No. 24, Cut 10); and when the music roll paper is in a central position between the two guide openings, the tracker adjustment should be perfect.

Be very careful in setting it, otherwise you will not get the proper working of the device.



Cut 13



Cut 14

The Speeder

SETS in the right hand corner of bottom bellows chest, just back of motor governor and channels connect in same (see Cut 9). If valve seems not to work, you can remove motor governor by four screws in upper part of governor that connect to wind chest and valve can be seen from front. But if you wish to remove pouch for same, remove bottom action. See if all tubes running to pouch and button from key bed are connected and are perfect.

Loud Bellows or Sustaining Pneumatic

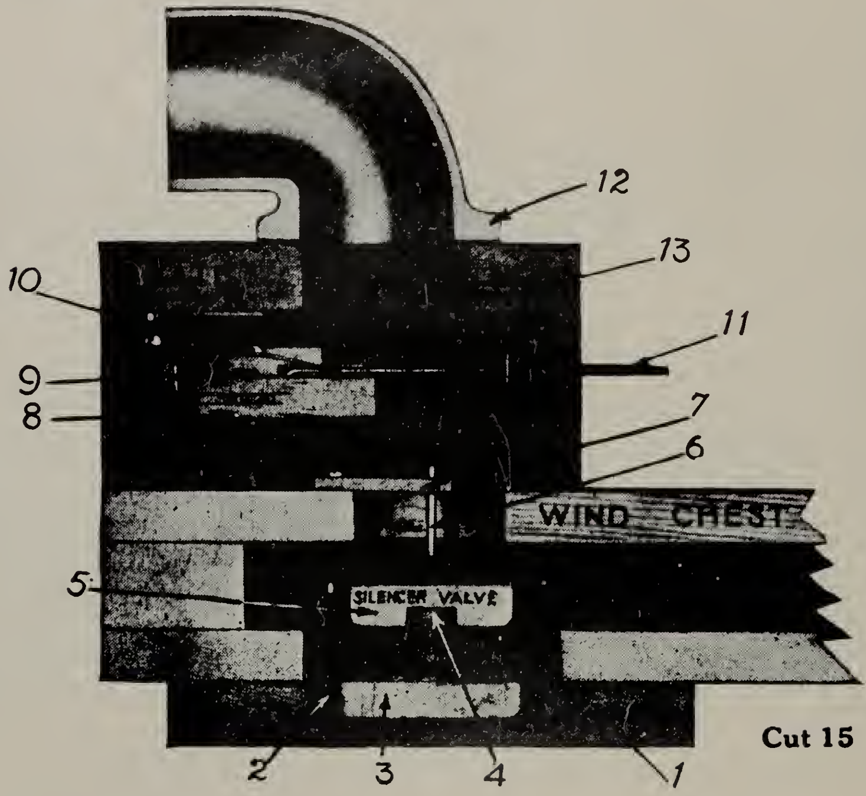
TO take the bellows out, remove the three screws in iron bracket underneath and lift bellows out. When a puffing noise occurs like the escaping of air, regulate the secondary valve by giving it less motion or travel, or else by putting in a piece of felt in the end channel opening (from outside).

To regulate the bleed in old style bellows, there is a little L screw No. 8 underneath valve box; this is to be turned in or out as the case requires (see Cut 13), to open or close the vent. In the later designs, primary valves are used. The travel or throw of the primary valve is 1-32nd inch and the secondary valves have 1-16th inch. See that the vent or bleed is always kept clean.

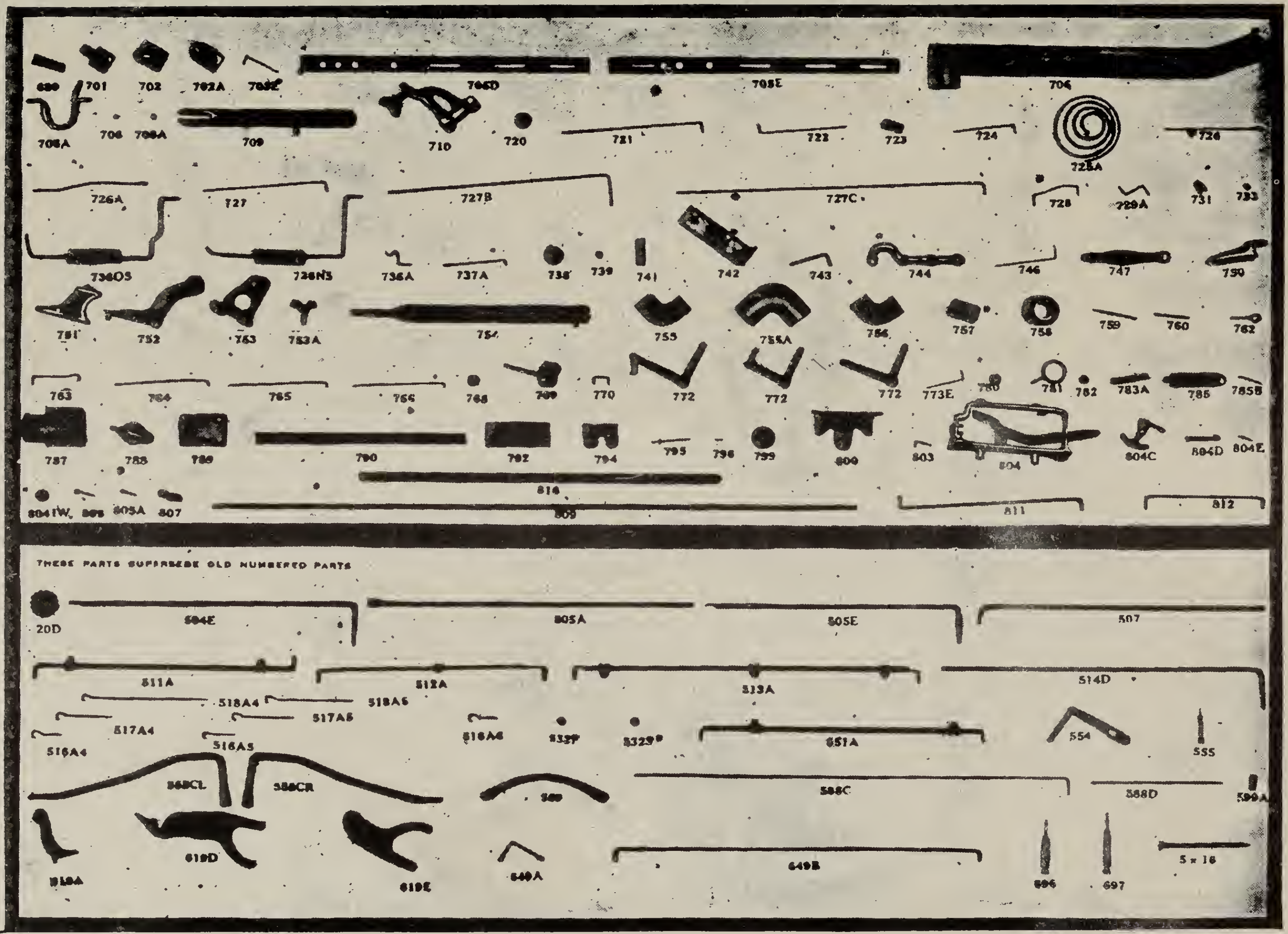
Silencer

THE silencer works in a valve box on back left end corner of bottom bellows chest. If valve works too slow, or does not work at all, first remove the bottom action, then remove cap No. 1 over silence box; see that there are no holes in the pouch and that the bleed is clean. See that all tubing leading to this is clear and tight.

When the silencer button is pushed down, air rushes through the tube and inflates the pouch No. 2, lifting the valve No. 5 and closing port hole in wind chest, thus preventing pneumatic action from playing.



Cut 15



Metal Parts Cut 16.

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